

IN THE CLAIMS:

1 (cancelled).

2 (new). A method for producing electronic video signals representative of color images of a scene, comprising the steps of:

 providing a luminance sensor and a color sensor having a color filter thereover, said color filter having a two color red-green checkerboard filter pattern;
 providing a beamsplitter, and providing a lens system that focuses light from said image, via said beamsplitter, onto said luminance sensor and said color sensor; and

 producing electronic video signals from outputs of said luminance sensor and said color sensor.

3 (new). The method as defined by claim 2, wherein said step of producing video signals from the outputs of said luminance sensor and said color sensor includes diagonal binning of the signals from said color sensor.

4 (new). The method as defined by claim 3, wherein said diagonal binning of the signals from said color sensor includes diagonal binning to obtain a red color signal and a green color signal.

5 (new). The method as defined by claim 3, wherein said diagonal binning includes clocking out of said color sensor using alternating horizontal and vertical shifts.

6 (new). The method as defined by claim 4, wherein said diagonal binning includes clocking out of said color sensor using alternating horizontal and vertical shifts.

7 (new). The method as defined by claim 4, wherein said step of producing video signals from the outputs of said luminance sensor and said color sensor includes deriving a blue color signal from the output of said luminance sensor and said red and blue color signals.

8 (new). The method as defined by claim 6, wherein said step of producing video signals from the outputs of said luminance sensor and said color sensor includes deriving a blue color signal from the output of said luminance sensor and said red and blue color signals.

9 (new). The method as defined by claim 7, wherein said step of producing video signals further includes decimating and interpolating said red and green color signals to obtain low resolution red and green color signals, filtering said luminance signals to obtain a low resolution white signal, and deriving a low resolution blue color signal from said low resolution white signal and said low resolution red and green color signals.

10 (new). The method as defined by claim 8, wherein said step of producing

video signals further includes decimating and interpolating said red and green color signals to obtain low resolution red and green color signals, filtering said luminance signals to obtain a low resolution white signal, and deriving a low resolution blue color signal from said low resolution white signal and said low resolution red and green color signals.

11 (new). The method as defined by claim 9, wherein said step of producing video signals further includes deriving high resolution red, green, and blue color signals from said low resolution red, blue, and green signals and said luminance signal.

12 (new). The method as defined by claim 10, wherein said step of producing video signals further includes deriving high resolution red, green, and blue color signals from said low resolution red, blue, and green signals and said luminance signal.

13 (new). The method as defined by claim 7, wherein said step of providing a lens system comprises providing a motion picture film camera type of lens system.

14 (new). The method as defined by claim 8, wherein said step of providing a lens system comprises providing a motion picture film camera type of lens system.

15 (new). Apparatus for producing electronic video signals representative of color images of a scene, comprising:

a luminance sensor and a color sensor having a color filter thereover, said color filter having a two color red-green checkerboard filter pattern;

a beamsplitter, and a lens system that focuses light from said image, via said beamsplitter, onto said luminance sensor and said color sensor; and means for producing electronic video signals from outputs of said luminance sensor and said color sensor.

16 (new). Apparatus as defined by claim 15, wherein said lens system comprises a motion picture film camera type of lens system.